

Determination of ^{210}Pb in NIST Ashed Bone by Gamma-ray Spectroscopy

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The National Institute of Standards and Technology is currently in the process of certifying concentrations of a variety of natural and anthropogenic radionuclides in an ashed bone matrix. One of the radionuclides being measured is ^{210}Pb among a number of international expert laboratories. NIST measured the ^{210}Pb by gamma-ray spectroscopy using a high-purity germanium detector. The detector was calibrated using ^{210}Pb and ^{241}Am spiked ashed bone to avoid matrix effects. Seven ashed bone samples of identical mass and geometry as the spiked standard were counted for two weeks each for the NIST determination. A number of quality control markers were followed over the course of the sample, standard and background measurements to assure spectral stability. Results from among the reporting laboratories will be presented and discussed in this paper.